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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|----------------------------|------------------|
| 10/586,799 | 08/07/2008 | Axel Weyer | 207,648 | 8761 |
| 38137 7590 04/06/2011 ABELMAN, FRAYNE & SCHWAB 666 THIRD AVENUE, 10TH FLOOR NEW YORK, NY 10017 | | | EXAMINER KERNs, KEVIN P | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1735 | |
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| | | | 04/06/2011 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/586,799 | Applicant(s) WEYER ET AL. | |
| | Examiner Kevin P. Kerns | Art Unit 1735 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Drafts, Person's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 12-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Streubel et al. (WO 02/090019 A1) – also see the US equivalent reference of Streubel et al. (US 7,025,118) for translation of the German text of WO 02/090019 A1.

Regarding independent claims 12 and 22, Streubel et al. disclose both an apparatus and method of determining a position of a solidification point during continuous casting of liquid steel (abstract and Figure of WO 02/090019 A1, as well as the abstract; column 1, lines 15-26; column 2, lines 34-67; column 3, lines 1-53; column 4, lines 1-10; and Figure of equivalent US 7,025,118), in which the apparatus and method include the following features:

determining a liquid core volume of the liquid core 7 in the strand shell 8 of the cast strand 5 within a continuous casting mold 1 (column 3, lines 25-49); and

indirectly measuring the liquid core 7 (i.e. the solidification point 9 of the cast strand 5) by adjusting drive roller pairs (4,4') that support and guide the cast strand 5 based on a calculation model (for a momentary, or temporary, position of the solidification point during the casting process) via direct measurement of the adjustable drive roller pairs (4,4'), such that the liquid core 7 is continuously adjusted as dependent

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upon casting parameters, such as strand thickness, casting speed, casting temperature etc., which represent momentary and changeable locations of the solidification point along its entire solidification stretch of the cast strand during casting (column 2, lines 42-57; column 3, lines 50-53; column 4, lines 1-10; and Figure).

Regarding claims 13 and 14, the measurement is operable to be further based on the adjustable thickness of the strand 5 (column 3, lines 31-45) and based on change of the stop plug position (i.e. liquid steel flow through melt inlet 6 of Figure 1) in front of the continuous casting mold 1 (which would be an inherent step since solidification is controlled based on the position and force applied by the support rollers (4,4') and the plug on the continuous casting mold 1 to not allow for liquid metal backflow out of the casting mold).

Regarding claims 15 and 16, the measurement is operable to be further based on melt level and melt volume change of the receptacle adjacent the melt inlet 6, such that the solidification point 9 of the liquid core 7 in the strand shell 8 of the cast strand 5 is continuously adjustable (column 3, lines 50-53; column 4, lines 1-10; and Figure).

Regarding claims 17 and 19, the measurement is operable to be further based on continuously adjustable clamping forces and positions of the support rollers (column 3, lines 31-49; and Figure).

Regarding claim 18, the calculation model is based on automatic adjustment of the support rollers (column 3, lines 25-53).

Regarding claims 20 and 21, the support rollers (4,4') are adjusted by an adjustable piston-cylinder arrangement (i.e. position-controlled hydraulic cylinders),

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such that the support rollers (4,4') are arranged on the loose side of the casting mold 1, as this is the side where the support rollers (4,4') are operable to move into the other opposite rollers for compression on the cast strand 5 to temporarily change the local position of the solidification point 9 (column 3, lines 25-53; and Figure).

Response to Arguments

3. The examiner acknowledges the applicants' amendment received by the USPTO on February 25, 2011. The amendments/remarks overcome the prior objections to the specification and claim 14, as well as the prior 35 USC 112, 2nd paragraph rejections. Claims 12-22 remain under consideration in the application.

4. Applicants' arguments filed February 25, 2011 have been fully considered but they are not persuasive.

With regard to the applicants' remarks/arguments on pages 9-11 of the amendment, it is noted that the newly underlined portions of the 35 USC 102(b) rejections address the applicants' amendments to independent claims 12 and 22. Regarding the specific arguments, the applicants' major argument (on pages 10 and 11 of the remarks section) is that Streubel et al. is based on a "*completely different principle*". Although Streubel et al. may disclose a "different principle", it is noted that (and based on the broadest reasonable claim interpretation) the claimed invention does not distinctly define over Streubel et al. Regarding the newly amended portions of independent claims 12 and 22, the Streubel et al. reference still teaches the limitation

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“which generate respective force and/or path signals which represent continuously changeable momentary positions of the solidification point in the cast strand (1) during casting along an entire solidification stretch of the cast strand”. Streubel et al. teach that the solidification point is kept constant by changing the force on the rollers. In order to keep the solidification point constant, it would mean that the solidification point is always moving. In other words, when the system senses a change in the solidification point, the force is changed by the rollers. In order to differentiate from the teachings of Streubel et al. and to further clarify the applicants' invention, it is suggested that the applicants claim that the solidification point moves to different location(s) continuously.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin P. Kerns whose telephone number is (571)272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Ward can be reached on (571) 272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin P. Kerns
Primary Examiner
Art Unit 1735

/Kevin P. Kerns/
Primary Examiner, Art Unit 1735
April 6, 2011